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NO. 87-577

In the Supreme Court of the United States

OCTOBER TERM, 1987

ARDEN A. ANDERSON, ET AL.,
Petitioners

vs.

STATE OIL AND GAS BOARD
OF ALABAMA, ET AL.,
Respondents.

ON PETITION FOR WRIT OF CERTIORARI TO THE COURT OF CIVIL APPEALS OF ALABAMA

BRIEF IN OPPOSITION BY RESPONDENT GETTY OIL COMPANY

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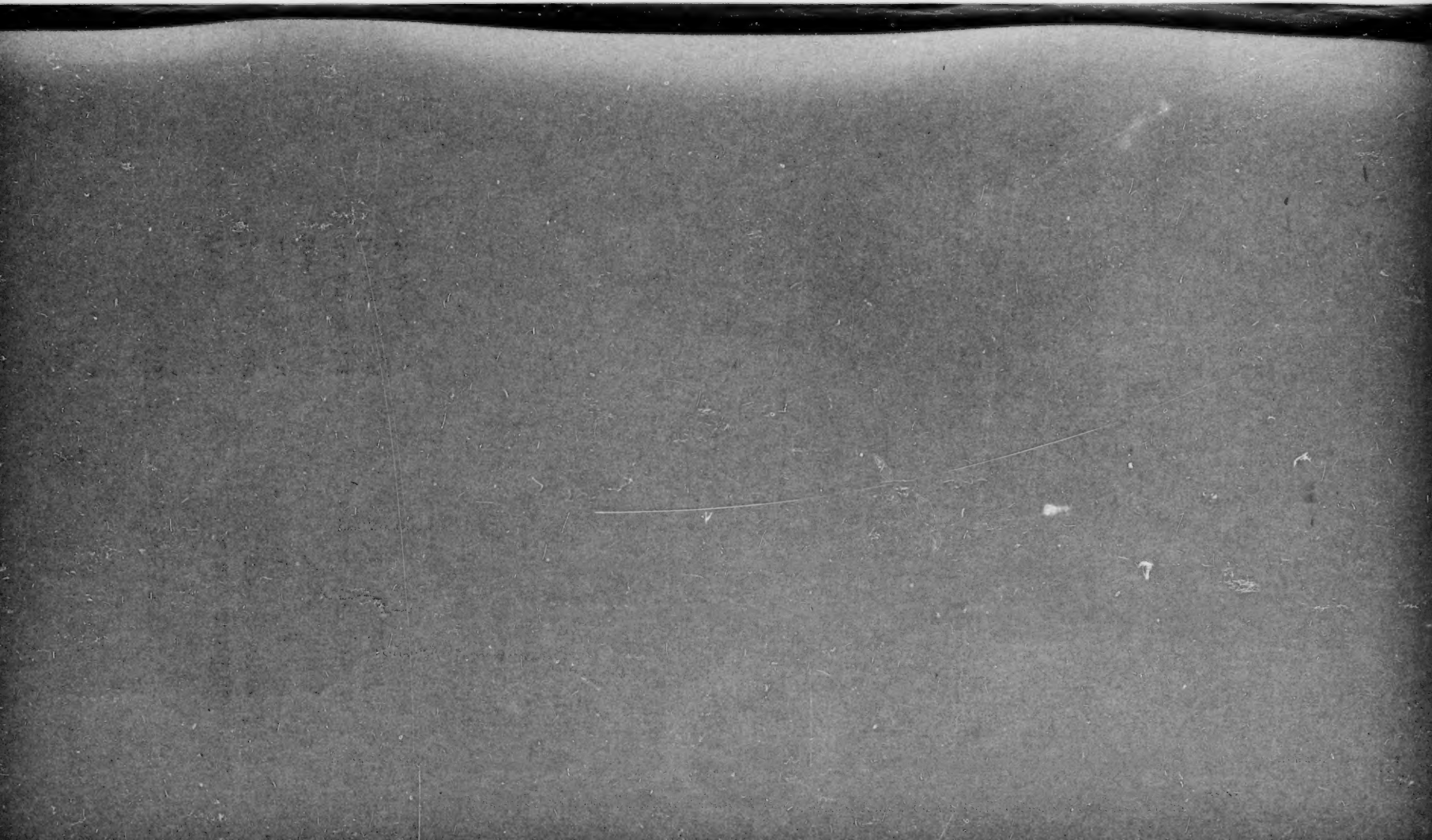

QUESTIONS PRESENTED

1. Whether a decision by a state administrative agency to deny discovery requests found to be cumulative, unnecessary, costly, dangerous, untimely, and directed toward confidential and proprietary information violates the Due Process Clause or rests within the agency's sound discretion?

2. Whether an appellate court, which has reviewed the record and concluded that no violation of the Due Process Clause has occurred, may support its decision on the merits by reference to the harmless error rule?

LIST OF AFFILIATES AND SUBSIDIARIES OF GETTY OIL COMPANY

Getty Oil Company is a wholly owned subsidiary of Texaco Inc. The affiliates and subsidiaries of Texaco Inc. listed in its most recent Form 10-K filed with the Securities and Exchange Commission are as follows:

Getty Oil Company
Getty Pipeline, Inc.
Riverway Gas Pipeline Company
Texaco Oils Inc.
Texaco Producing Inc.
Texaco Refining and Marketing Inc.
Texaco Trading and Transportation Inc.
The Texas Pipe Line Company
Deutsche Texaco AG
Norsk Texaco Oil A/S
S. A. Texaco Belgium N.V.
S. A. Texaco Petroleum N.V.
Texaco A/S
Texaco Britain Limited
Texaco Denmark Inc.
Texaco Investments (Netherlands), Inc.
Texaco (Ireland) Limited
Texaco Limited
Texaco North Sea U. K. Company
Texaco Oil Aktiebolag
Texaco Petroleum Maatschappij (Nederland) B.V.
Refineria Panama S. A.
Refineria Texaco de Honduras, S.A.
Texaco Brasil S.A. - Productos de Petroleo
Texaco Caribbean Inc.
Texaco Nigeria Limited
Texaco Panama Inc.
Texaco Petroleum Company
Texaco Trinidad, Inc.
Texas Petroleum Company
Texaco Butadiene Company
Texaco Chemical Company
Canadian Reserve Oil and Gas Ltd.
Texaco Canada Inc.
Texaco Canada Resources Ltd.
Getty Marine Corporation
Texaco International Trader Inc.
Texaco Overseas Holdings Inc.
Texaco Overseas Petroleum Company
Texaco Overseas Tankship Ltd.

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Respondent Getty Oil Company respectfully requests that this Court deny the Petition for Writ of Certiorari that seeks a review of the opinion rendered by the Court of Civil Appeals of Alabama in this matter. That opinion is reported at *State Oil and Gas Board of Alabama v. Anderson*, 510 So. 2d 250 (Ala. Civ. App. 1987).

STATEMENT OF THE CASE

Although the Statement of the Case contained in the Petition for Writ of Certiorari is accurate as to the facts stated, the omission of numerous relevant facts renders it seriously misleading. Petitioners essentially ignore almost two years of administrative proceedings before the State Oil and Gas Board of Alabama (the "Board") and the extensive discovery that occurred throughout those proceedings.

The unitization proceedings which are at issue in this case began on May 31, 1982 (not February 10, 1984, as indicated by Petitioners), when Getty Oil Company ("Getty") filed its initial unitization petition with the Board. This petition for unitization was filed because evidence disclosed that pressure was declining in the Hatter's Pond Field and that, without unitized operations, millions of dollars worth of hydrocarbons would be irretrievably lost. (BR100001.)[1] Thirteen days of hearings were eventually held on the original petition (the "First Hearings"). These hearings featured an intense debate by the parties (including Petitioners) concerning several issues, including what property should be included in the Unit and the proper allocation formula by which total production from the Unit would be allocated to the individual tracts in the Unit. Petitioners were actively involved in these First Hearings.

Discovery began in the First Hearings on June 24, 1982, with a request for production of documents.

[1] The six-digit numbers preceded by "BR" are citations to pages from the Board record in this matter.

(BR100221.) Thereafter, numerous discovery requests were made by several different parties, and Getty voluntarily produced literally thousands of pages of documents. Although Petitioners were actively involved in the First Hearings, they filed no requests for discovery despite the fact that the law firm representing them filed several discovery requests on behalf of other parties whose interests wewe aligned with those of Petitioners. In addition, as required by law, Getty had filed thousands of pages of documents with the Board for the wells that Getty operated, all of which were available to the public. (BR407118-9958.) The documents produced by Getty included *all* the raw data available for each of the wells Getty operated. (*Id.*) No party ever objected to a failure by Getty to comply fully with all discovery requests during the First Hearings.

On July 29, 1983, the Board issued Order No. 83-170, a copy of which is not included in Petitioners' Appendix but is appended hereto as Appendix A.[2] This order resolved most of the issues involved, including the proper allocation formula for the Unit; directed that a technical committee be formed for the purpose of studying and remapping a certain portion of the Field; and directed Getty to submit a new petition incorporating the terms of the order and the committee's findings.

The committee (the "Technical Committee") formed pursuant to Board Order No. 83-170 was composed of experts representing hundreds of owners in the field (including Petitioners). Following the conclusion of the committee's deliberations and as required by Order No. 83-170, Getty filed a second petition concerning unitization in February 1984. (BR100786.) The second petition incor-

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2 A copy of Order No. 83-170 was attached to and specifically made a part of Order No. 84-382, which is included in Petitioners' Appendix (pp. A-31 to A-81). However, neither Order No. 83-170 nor any of the other exhibits to Order No. 84-382 were included in Petitioners' Appendix.

porated the findings of Order No. 83-170 and of the Technical Committee and initiated a second set of hearings spanning a period of more than five months (the "Second Hearings"). At the time the second petition was filed, it was contemplated that the only issues that would continue to be litigated were those left unresolved by Order No. 83-170. Instead, Petitioners and others filed separate petitions with the Board in an effort to change or alter the formula and other provisions of Order No. 83-170 and insisted on a relitigation of all these issues, even though the evidence revealed that continued delays in implementing unitization were causing an irretrievable loss of approximately $250,000.00 worth of hydrocarbons per day due to the decline in reservoir pressure. (BR100742, 200251, 203551-552, and 206916.)

Discovery during the Second Hearings began with Petitioners' first request filed on March 20, 1984, only ten days prior to the scheduled prehearing conference. (BR100928.) Several supplemental discovery requests were filed prior to the April 11, 1984 hearing. (BR100928 and 100943.) At the April 11 hearing, the Board indicated that it would take these requests and other matters under advisement, but counsel for Petitioners insisted on an immediate ruling. Thus, because Petitioners' discovery requests related to issues that had already been litigated and decided in the First Hearings, the Board denied Petitioners' requests. (BR101013.) Petitioners then filed a petition for mandamus with the Circuit Court of Tuscaloosa County, and a decree was issued, with the Board's consent, allowing Petitioners to relitigate certain issues. (BR101022.) Thereafter, the Board reheard arguments concerning discovery and other matters that had been previously litigated.

Petitioners' discovery requests during the Second Hearings included requests for additional bottom hole

pressure tests,[3] oral depositions, and production of documents. At the time Petitioners filed their request for additional bottom hole pressure tests, there were already more than 100 such tests in evidence covering a period of seven years. (BR205902-903.) Petitioners' request would have added only 13 additional tests. Evidence showed (and Petitioners' experts admitted) that these tests would cost between $12,000.00 and $30,000.00 per well and that there was a substantial risk that such tests could damage one or more wells to the point that workovers or new wells would be required at enormous expense—possibly as much as $8,000,000.00 per well. (BR205927-932.) Furthermore, a subcommittee of the Technical Committee, which had been formed pursuant to Order No. 83-170 and which represented all parties to the proceedings, voted seven to one, with one abstention, not to require additional bottom hole pressure tests. (BR302711-714.) Finally, there was expert testimony that these tests would provide no useful information. (BR205903; *see* BR204705-707.) In light of these factors and because the tests were only relevant, if at all, to issues that had already been resolved, the Board refused to require these additional tests. (See pages A-51 through A-54 of Petitioners' Appendix for text of Board Order on this issue.)

Regarding Petitioners' request for oral depositions, Getty voluntarily complied by making three witnesses available. (BR101097.) Consequently, there was no need for the Board to order depositions to be taken.

With respect to the discovery of documents, Getty voluntarily produced virtually all of the documents requested by Petitioners and by other parties during the Second Hearings even though most of these documents

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[3] A bottom hole pressure test measures certain pressures in a well bore and can be useful for determining various engineering facts concerning the well, such as the remaining expected life of the well.

related solely to issues that had already been litigated and resolved. As noted above, the documents produced by Getty included *all* of the raw data available for *all* wells operated by Getty. Getty refused to produce only a limited number of documents containing proprietary interpretations of this raw data. The documents that were not produced fell into the following groups: seismic data, written studies of core samples, and internal economic evaluations. Petitioners' own representative on the Technical Committee agreed with the Committee's decision that seismic data could not accurately be used in the Hatter's Pond Field. (BR302548-549.) Although all of the raw data needed for Petitioners to prepare their own core studies and economic evaluations were available, Petitioners' expert witness acknowledged that he had not even bothered to review this raw data. (BR204635 and 204677.) Finally, Getty offered testimony explaining that the documents it had not produced contained sensitive, confidential, and proprietary information which, if produced, would have been prejudicial to Getty's other business interests in the general area. (BR205860-861.)

The ultimate findings of the Board on Petitioners' discovery requests were summarized by the Board in Order No. 84-382 (pages A-51 through A-54 and A-67 through A-72 of Petitioners' Appendix). The most pertinent portion of these findings reads as follows:

> 64. That the Board has been provided with ample information and sufficient data to make a decision on the Petitions presently before it.
>
> 65. That voluminous amounts of information and data have been produced during these hearings (Docket Nos. 4-11-841 through 4-11-846A) and the previous hearings (Docket No. 8-19-821), and all parties involved in all of these proceedings have been afforded an opportunity to examine all pertinent information and data relating to the

unitization of the Hatter's Pond Field. Furthermore, all parties have had full opportunity to prepare and present their cases to the Board. The information that Getty Oil Company refused to provide those parties is not necessary to determine the issues presented before the Board.

66. That the discovery requests filed by Arden A. Anderson, Dominex, Inc., et al., Hatters Alabama Company and Leboc Mobile Company, and AMAX Petroleum Corporation were not filed in a timely manner and the granting of those requests would unduly delay the unitization of the Hatter's Pond Field.

67. That, although there are no formal discovery procedures set out in the regulations of the Board, the policy of the Board is to provide all parties before it with a full and fair hearing. *The policy of the Board is not to deny reasonable requests for discovery;* however, to the extent not already complied with, the discovery requests of Arden A. Anderson, Dominex, Inc., et al., Hatters Alabama Company and Leboc Mobile Company, and AMAX Petroleum Corporation are unreasonable, untimely, will result in waste, and will not protect the coequal and correlative rights of all the mineral interest owners in the proposed Hatter's Pond Field Unit.

(BR101462-463.) (Emphasis added.) It should be noted that prior to making these findings, the Board had heard not only the testimony in these proceedings relating to discovery but had also heard extensive technical evidence in these proceedings and in more than 60 previous hearings relating to the Hatter's Pond Field. (BR400248-822.)

Order No. 84-382 not only resolved the above-discussed discovery issues but also reaffirmed the Board's findings with respect to the issues decided by Order No. 83-170, resolved the issues that were not decided by Order

No. 83-170, and ordered unitization to commence upon the approval of 75% in interest of the owners in the Unit. On April 9, 1985, the Board issued Order No. 85-63, in which it found that the Unit had been approved by the requisite 75% in interest. In fact, more than 90% in interest of the working interest owners and more than 75% in interest of the royalty owners signed written ratifications approving the Unit. (BR101839-841.) Furthermore, despite the fact that Exxon Corporation (the operator and largest single working interest owner of the tract in which all but one of the Petitioners own their interest) did not ratify the Unit prior to the issuance of Order No. 85-63, it has since filed briefs in the appellate proceedings and made oral arguments in favor of the Board's orders.

SUMMARY OF ARGUMENT

Petitioners attempt to turn a proper exercise of discretion by the Board into a constitutional issue. By their incomplete statement of the case, Petitioners insinuate that there was practically no discovery in this matter and that their property was "condemned" without due process. On the contrary, there was voluminous discovery both during the First Hearings, which Petitioners have attempted to ignore, as well as during the Second Hearings. Getty only refused to produce a few documents out of the thousands of documents that were requested. The Board did not order production of these few documents because the Board found, after hearing testimony concerning the nature of the documents, that they were cumulative, were unnecessary for determination of the issues before the Board, were requested in an untimely fashion, and contained or revealed proprietary and confidential material concerning Getty's interests in other areas.

Federal law on this question is well decided. There is no blanket constitutional right to discovery in an ad-

ministrative context, although due process violations can occur by the denial of discovery under particular factual circumstances. Petitioners want to involve this Court in the tedious factual determination of whether, in light of the 20,000-page record and voluminous discovery that occurred, the Alabama Court of Civil Appeals erred when it affirmed a discretionary decision by the Board not to require production of a few proprietary documents. There is simply no reason to involve this Court in resolving factual disputes that have already been litigated twice before a state administrative agency and upheld by the Alabama appellate courts. To achieve the result Petitioners desire, this Court would have to hold that state administrative agencies do not have discretionary power to deny discovery requests. Even if this Court were inclined to adopt such a rule of law, the facts of this case provide a poor background to do so.

ARGUMENT

A. *Introduction*

This case is in reality nothing more than a factual dispute. Petitioners have from the beginning of these proceedings objected primarily to the formula that determines what percentage of total production is to be allocated to each tract in the Hatter's Pond Unit. Basically, Petitioners want more money than the Board found they were entitled to receive, and they are attempting to use this Court as a vehicle to get it. They have contended for five years now that the Hatter's Pond Field consists of several separate reservoirs rather than one reservoir. The Board concluded, however, after considering technical evidence and expert testimony, that there was only one heterogeneous reservoir in the Field. This conclusion was ultimately upheld by the Alabama Court of Civil Appeals, and the Supreme Court of Alabama was not persuaded to grant a writ of certiorari.

Now Petitioners come before this Court in what amounts to a final effort to relitigate their multiple reservoir claim. This time, Petitioners are attempting to create a constitutional issue out of the dispute over the few proprietary documents that were not produced by Getty. Despite their efforts to constitutionalize discovery, when the complete facts of this case are considered it becomes apparent that the only issue Petitioners can raise is whether the Board abused its broad discretion in discovery matters.

B. *The Only Discovery Issue Involves a Question of Discretion and not a Question of Constitutional Law*

There is no question of law here for this Court to resolve. It has been well established by the federal courts that there is no blanket constitutional right to discovery in administrative matters. *See, e.g., Silverman v. Commodity Futures Trading Commission*, 549 F.2d 28, 33 (7th Cir. 1977); *N.L.R.B. v. Interboro Contractors, Inc.*, 432 F.2d 854 (2d Cir. 1970), *cert. denied*, 402 U.S. 915 (1971); *Waco Financial, Inc. v. National Association of Securities Dealers, Inc.*, 513 F. Supp. 758, 761 (W.D. Mich. 1981). This Court has addressed this issue in the criminal context in *Weatherford v. Bursey*, 429 U.S. 545 (1977), where it stated: "There is no general constitutional right to discovery in a criminal case." *Id.* at 559. Similarly, this Court has stated that "the Due Process Clause has little to say regarding the amount of discovery which the parties must be afforded." *Id.* (quoting *Wardius v. Oregon*, 412 U.S. 470, 474 (1973)).

Petitioners attempt to demonstrate a supposed conflict among the circuits on this question by ignoring that, even without a blanket constitutional right to discovery, the denial of discovery *under particular factual circumstances* could result in a denial of due process. Petitioners do this by arguing that *Silverman* stands for the

proposition that there is no constitutional right to any discovery in an administrative proceeding and that *Silverman* conflicts with other cases that recognize that a due process violation could occur under certain circumstances as a result of the denial of discovery. However, the *Silverman* court, after stating that there was no basic constitutional right to pretrial discovery in administrative proceedings, noted that the Due Process Clause does protect the parties' rights by providing for fundamental fairness. Then, after reviewing the facts, the *Silverman* court found that there had been no due process violation in that case. *Silverman*, 549 F.2d at 33-34. Thus, the cases cited by Petitioners are actually in complete harmony with *Silverman* as well as with *Interboro* and *Waco Financial* and reflect only an acknowledgment that, under the facts of a given case, a due process violation could occur.

This is the very rule applied by the Alabama Court of Civil Appeals in this case as demonstrated by its statement that although "there is no basic constitutional right to prehearing discovery in administrative proceedings . . . 'the denial of prehearing discovery *as applied* in a particular case' could result in a denial of procedural due process." *Anderson*, 510 So. 2d at 256 (quoting *Dawson v. Cole*, 485 So. 2d 1164, 1168 (Ala. Civ. App. 1986)). In fact, the Court of Civil Appeals stated that it had examined the record in this case and was satisfied that, based on these facts, there had been no due process violation. *Anderson*, 510 So. 2d at 256. Thus, the court's holding in the present case was not that Petitioners had no due process rights concerning discovery but that any such due process rights had not been violated.

The essence of the decisions discussed above is that an administrative agency has broad discretion concerning discovery requests, as does a trial court under the Federal Rules of Civil Procedure. Petitioners themselves have previously urged that the rule of discovery in this case

should be "subject to the guiding discretion of the agency bound by the same constraints as a Circuit Judge." (Petitioners' Brief in Support of Petition for Writ of Certiorari to the Alabama Supreme Court, pp. 32-33.) Petitioners do not disagree with the law; all they disagree with is the Court of Civil Appeals' determination that the Board's exercise of discretion in this case was proper. Granting the Petitioners' request for a writ of certiorari would simply permit a consideration by this Court of the application of well settled law to the particular facts in this case. For this reason alone, the writ of certiorari should not issue. *See Rudolph v. United States*, 370 U.S. 269 (1962); *United States v. Johnston*, 268 U.S. 220, 227 (1925).

C. *The Facts Do Not Give This Court An Opportunity to Refine The Law in This Area*

Even if this Court were of the opinion that some refinement in the law concerning discovery were needed, the facts of this case do not present a proper opportunity for the Court to do so. It must be remembered that this case involves a denial of a few out of many discovery requests—*not* a denial of discovery. As noted in the Statement of the Case, extensive discovery occurred during both the First Hearings and the Second Hearings. Petitioners were active participants in the First Hearings while discovery proceeded, but they made no discovery requests.

After the Board resolved most of the issues in Order No. 83-170 and after Getty filed the second petition regarding unitization pursuant to that order, Petitioners hired a new lawyer and started filing discovery requests. As discussed above, these requests were directed at the same issues (primarily the multiple reservoir issue) that had already been extensively litigated by the parties during the First Hearings and resolved by the Board.

The Board's decision not to require the production of a few of the numerous documents requested was obviously within its discretionary powers. The requests were clearly filed in an untimely manner, coming as they did nearly two years after the proceedings had begun. Furthermore, they were apparently interposed merely for the purpose of delay since they addressed issues that had already been decided. The denial of discovery requests that are untimely and filed for the apparent purpose of delay certainly does not violate the Due Process Clause. *E.g., Price v. H.B. Green Transportation Line, Inc.*, 287 F.2d 363 (7th Cir. 1961); *Empresa National Siderurgica, S.A. v. Glazer Steel Co.*, 503 F. Supp. 1064 (S.D.N.Y. 1980). This is particularly true in a case in which the evidence revealed that delays in implementing unitization were causing all owners in the field an irrevocable loss of $250,000.00 worth of hydrocarbons *per day*.

Even apart from the time considerations, the additional bottom hole pressure tests requested by Petitioners would have been costly, dangerous, unnecessary, and cumulative. Rule 26(b)(1) of the Federal Rules of Civil Procedure specifically permits a limitation of discovery under these circumstances. The Federal Rules also give a trial judge discretion to deny discovery requests that are merely cumulative. In fact, the Federal Rules were amended in 1983 to make it clear that federal trial courts can limit discovery when the materials sought are cumulative, a rule described as embodying the existing practice of many courts. *See* Fed. R. Civ. P. 26(b) and comments. Accordingly, there is clearly no constitutional violation in denying discovery requests that are cumulative, costly, and dangerous.

Finally, as noted above, the Board found that those few documents that were not produced contained sensitive and proprietary information that would have been damaging to Getty's other business interests to disclose. Protec-

tion for such material is clearly recognized in Fed. R. Civ. P. 26(c), and it cannot be seriously contended by Petitioners that the Federal Rules concerning discovery are unconstitutional. *See, e.g., Smith & Wesson v. United States*, 782 F.2d 1074 (1st Cir. 1986) (district court acted within its discretion in denying discovery request for documents containing confidential commercial information). *See generally* 1 C. KOCH, ADMINISTRATIVE LAW AND PRACTICE, §5.60, p. 408 (1985).

Petitioners' contention that the Board did not have discretion to deny their request for production of these documents is tantamount to a contention that the denial of any discovery request is a constitutional violation. Under such a rule, all discovery requests would have to be granted automatically, no matter how costly, how dangerous, how cumulative, or how irrelevant. Unless this Court is prepared to make such a rule, issuing the writ would only permit this Court to spend many hours reviewing thousands of pages of technical documents and expert testimony to verify that no abuse of discretion occurred in this case.

D. *Petitioners' Harmless Error Argument Is Inapposite*

Petitioners argue in their second issue that the harmless error rule applied by the Alabama Court of Civil Appeals is in conflict with the decisions of this Court. Their argument on this point is completely misdirected. The first case cited by Petitioners is *Coe v. Armour Fertilizer Works*, 237 U.S. 413 (1915), a case which has utterly no relevance to the issue at hand. The issue in *Coe* was whether an execution pursuant to a judgment could be issued without giving the defendant notice and a hearing. Of course, this Court held that it could not and opined that due process was violated even if the result would have been the same after notice and hearing. This is a far cry from Petitioners' argument that due process was violated in the present case by the Board's refusal to compel discovery of certain

documents that contained sensitive and confidential information and that were found to be cumulative and unnecessary.

Petitioners also cite *N.L.R.B. v. Burns*, 207 F.2d 434 (8th Cir. 1953), and *Donnelly Garment Co. v. N.L.R.B.*, 123 F.2d 215 (8th Cir. 1941). Both these cases, however, involved the failure of an agency to admit allegedly relevant evidence at a hearing and not the failure to require discovery. Certainly, these two situations are quite different. In fact, the United States Court of Appeals for the District of Columbia Circuit made this same distinction with respect to *Burns* and *Donnelly* when it refused to find prejudicial error in an agency's refusal to issue *subpoenas ad testificandum* to four agency employees. *Great Lakes Airlines, Inc. v. Civil Aeronautics Board*, 294 F.2d 217 (D.C. Cir.), *cert. denied*, 336 U.S. 965 (1961).

The harmless error rule is embodied in a federal statute (28 U.S.C. §2111) and has been recognized by this Court. *See United States v. Lane*, 474 U.S. ____, 88 L. Ed. 2d 814 (1986); *Chapman v. California*, 386 U.S. 18 (1967). Indeed, the harmless error rule is a very well established principle of American law. However, it should be noted that the Alabama Court of Civil Appeals did not simply apply the harmless error rule. As revealed on page A-11 of Petitioners' Appendix, that court held that it was required "to examine whether the Board's denial of [Petitioners'] discovery request did *in fact* result in a denial of procedural due process. *We have examined the record and are satisfied that it did not.*" *Anderson*, 510 So. 2d at 256 (emphasis added). The court further held that, even accepting Petitioners' arguments as true, the requested discovery would have been merely cumulative, and the court pointed out that there was expert testimony that additional bottom hole pressure tests would have been useless because "too much pressure variation existed for the tests to be reliable." *Id.* at 256-257. Under these circumstances it can

hardly be said that the Alabama Court of Civil Appeals violated the Petitioners' rights under the Due Process Clause when it affirmed the Board's refusal to require additional bottom hole pressure tests and the production of a few proprietary documents.

CONCLUSION

For the reasons discussed above, the Petition for Writ of Certiorari should be summarily denied.

Respectfully submitted:

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APPENDIX A

BEFORE THE STATE OIL AND GAS BOARD OF ALABAMA

PURSUANT TO A DECISION RENDERED FOLLOWING SPECIAL SESSIONS OF THE STATE OIL AND GAS BOARD OF ALABAMA HELD ON AUGUST 19, 1982; NOVEMBER 8, 9, 1982; DECEMBER 13, 14, 15, 1982; FEBRUARY 21, 22, 23, 1983; May 9, 10, 11, 1983; AND JULY 1, 1983, THE FOLLOWING ORDER IS HEREBY PROMULGATED:

IN RE: ORDER NO. 83-170 Docket No. 8-19-821

This cause came on for hearing before the State Oil and Gas Board of Alabama on the petition of Getty Oil Company, for an Order approving and establishing a unit consisting of the hereinafter described "Unit Area" in the Hatter's Pond Field, Mobile County, Alabama, and requiring the operation of said Unit Area as one single unit for the production of gas, condensate, distillate, sulfur, and all associated and constituent liquid or liquefiable hydrocarbons within or produced from the Unit Area in order to effect secondary recovery operations by gas cycling and to increase the recovery of hydrocarbons under a program for the drilling of injection wells into the "Unitized Formation"(as hereinafter defined), so as to prevent waste and protect the correlative rights of interested parties, but limited to the proposed Unitized Formation, designated as the Smackover-Norphlet Gas Pool, a common source of supply of Unitized Substances underlying the hereinafter described Unit Area, which Unitized Formation is defined as that geological formation underlying the Unit Area which is the

stratigraphic equivalent of the subsurface interval between the electric log depths of 17,988 feet and 18,429 feet in the Getty Oil Company-Peter Klein 3-14 Well, Permit No. 1978, located in Section 3, Township 2 South, Range 1 West, Mobile County, Alabama, in the Hatter's Pond Field, or such other enlarged interval as may be ordered by the State Oil and Gas Board of Alabama.

Said petition further seeks an Order of the Board approving the Unit Agreement and the Unit Operating Agreement for the proposed unit and the establishment of Special Field Rules providing for unitized operations in conformity with the provisions of said Unit Agreement and said Unit Operating Agreement and the provisions of Section 9-17-1 through 9-17-32 and Section 9-17-80 through 9-17-88, *Code of Alabama* (1975). Said petition also seeks entry of an Order by the Board amending the existing Special Field Rules for the Hatter's Pond Field (Order No. 75-134 as last amended by Order No. 82-91).

Said petition further seeks entry of an Order by the Board unitizing, pooling and integrating the Unit Area, as underlain by the above defined Unitized Formation, into one single unit so as to require all owners or claimants of royalty, overriding royalty, mineral, leasehold and all other interests within said unit to unitize, pool and integrate their interests and develop their lands or interests within the Unit Area as one single unit, and designating Getty Oil Company as the operator of said unit in accordance with the laws of the State of Alabama, and establishing an allowable for the Unitized Formation.

The proposed "Unit Area" (See Exhibit 1 in Appendix) consists of the following described lands in Mobile County, Alabama:

In Township 1 South, Range 1 West:

SE 1/4 of Section 27; S 1/2 of Section 28; All of Sections 33, 34 and 35.

In Township 2 South, Range 1 West:

All of Section 2, 3 and 4; SE 1/4 of Section 8; All of Sections 9 and 10; All that part of the NW 1/4 of the NW 1/4 of Section 11 lying West of the west right-of-way line of the St. Louis-San Francisco Railroad and all that part of the W 1/2 of the SW 1/4 of the NW 1/4 of Section 11 lying West of the west right-of-way line of the St. Louis-San Francisco Railroad; All of Sections 15, 16 and 17; that part of the NW 1/4 of Section 22 lying North and West of the west right-of-way line of Interstate Highway 1-65.

Findings

The Board having heard over 100 hours of testimony of all the witnesses and all parties desiring to be heard, having carefully examined over 400 Exhibits and other documentary evidence and having heard the arguments of counsel and being fully advised of the premises and after due consideration thereof, finds as follows:

1. That due, proper and legal notice of the hearing of said cause at these special sessions has been given in the manner and form and within the time provided by law and the rules and regulations of this Board and that Petitioner has fully complied with the Notice requirements of Rule 400-1-12-.10 of the *State Oil and Gas Board of Alabama Administrative Code*. Further, Petitioner has presented evidence that it made a diligent and extraordinary effort, at great expense, to provide notice to all interested parties by methods in addition to and beyond the requirements of said Rule 400-1-12-.10, including the following: mailing certified letters to interested parties; obtaining lists of

interest owners from the operator of Section 28, Township 2 South, Range 1 West and mailing notice to said owners; obtaining lists of interest owners in the Hatter's Pond Field by reviewing title opinion files and mailing notice to said owners; running advertisements in the *Mobile Press Register;* running an advertisement in the *Southeastern Oil Review;* and hiring an independent landman to post copies of the notice of this hearing in post offices, convenience stores, filling stations, and other places located in and near Hatter's Pond Field. Due and legal proofs of newspaper publication are on file with the Board and are part of this record. Proof and documentation of first class mailings and certified mailings are on file with the Board and are part of this record. The Board has full jurisdiction of this cause.

I.

NEED FOR UNITIZATION

The Hatter's Pond Field is one of Alabama's most significant gas-condensate fields in terms of quantity and value of hydrocarbons. It is a unique field in terms of structural and stratigraphic complexities that include faults, salt intrusions, lithologic changes, and large variations in porosities, permeabilities, and hydrocarbon pay thicknesses and distributions. These factors greatly influence both the amount of hydrocarbons beneath each tract and the abilities of wells to produce these hydrocarbons.

Within the Hatter's Pond Field, well drilling, completion, production, and maintenance costs are extremely high due to the great depths and hostile geologic environment to drilling and production. Production in this field is from a depth of approximately 18,000 feet. The high risk of operations at this great depth are most often related to mechanical problems resulting from high temperatures,

high pressures, and salt flowage. The unitization of the Hatter's Pond Field would, therefore, be advantageous for both primary and secondary recovery operations.

The Hatter's Pond Field produces hydrocarbons from two different formations or rock units. These are the Smackover Formation, which is primarily a carbonate, and the Norphlet Formation, which is primarily a sandstone. Both formations have distinct and often highly variable characteristics that result from their depositional and diagenetic histories. These characteristics include chemical compositions and variations in porosities, permeabilities, and water saturations, all of which affect the distribution of hydrocarbons within the reservoir. In addition, there are extreme variations in hydrocarbon pay thicknesses within the field, and these are related to the amounts of structural deformation as well as to porosity and permeability changes.

In support of the Petition before the Board to unitize the Hatter's Pond Field, Getty Oil Company (hereinafter referred to as Petitioner) presented evidence that included geologic exhibits, engineering and economic analyses, computer modeling studies, and testimony of expert witnesses. Petitioner avers that this field should be unitized and a gas cycling secondary recovery program should be implemented expeditiously in order to insure the continuation of orderly and proper development, avoid the drilling of unnecessary wells, protect correlative rights of mineral interest owners, and prevent waste.

An expert engineering witness for Petitioner testified that the results of a computer modeling study indicate that gas cycling, as a secondary recovery program, would be the most economical and beneficial method of continued production in the Hatter's Pond Field and that

this study also indicates that such a program will be successful (Getty Exhibit 13). The witness further testified that the characteristics of the producing formations in the field are suitable for partial pressure maintenance and enhanced recovery through the injection of residue gas, other unitized substances, or outside substances in the proper manner and method as proposed by Petitioner; and that the injection of such substances into the reservoir at strategic locations will result in the establishment of an adequate pressure maintenance and enhanced recovery program, which will result in the efficient production of hydrocarbons and a substantial increase in the yields and ultimate recovery of hydrocarbons.

An expert engineering witness for Petitioner maintains that unitization is in the interest of conservation and that the estimated total cost of conducting the secondary recovery operations will not exceed the value of the estimated total additional hydrocarbons to be recovered through enhanced recovery methods (Getty Exhibit 13-M). Petitioner contends that unitization is necessary in order that pressure maintenance and secondary recovery operations can be initiated and maintained in a complete and comprehensive manner; and that the producing formations must be unitized into a single, reservoir-wide unit in order to insure that injection is made at critical locations and that production can occur from the most strategic wells for the benefit of the hydrocarbon pool as a whole.

An expert engineering witness for Petitioner testified that unitization is necessary to prevent the drilling of unnecessary wells and will be advantageous because of the inherent drilling, completion, and production problems in the field (Getty Exhibits 15-20). Petitioner asserts that unitization will provide for the efficient recovery of hydrocarbons from the proposed unit area and is needed for both primary and secondary recovery operations, and that

unitization will also allow for the drilling of wells at optimum locations, regardless of present drilling unit boundaries, so as to increase the ultimate recovery of hydrocarbons and maintain balance and equity between tracts. Petitioner further contends that unitization will protect the correlative rights of mineral interest owners in the proposed unit area and will prevent the loss of recoverable hydrocarbons.

An expert engineering witness for Petitioner maintains that a delay in unitization will result in the irrevocable loss of hydrocarbons (Getty Exhibit HO-9), and that the enhanced recovery program of gas cycling or injection should be initiated well before the reservoir pressure has declined to the dew point in order to avoid retrograde condensation and any harm to the reservoir.

In support of Petitioner, a representative of Creola asserts that it is vital to the welfare of Creola and other royalty interest owners, as well the working interest owners and the State of Alabama, that the Hatter's Pond Field be promptly unitized and that a program of gas injection commence as soon as possible.

A representative of Mrs. Hazel Hinson Butler (hereinafter referred to as Mrs. Butler) stated that Mrs. Butler is in support of the petition.

Amax Petroleum Corporation (hereinafter referred to as Amax) stated no opposition to the concept of unitization and a representative argued that unitization is the best possible way to produce hydrocarbons from the Hatter's Pond Field.

A representative of N. Earl Baldwin, Howard M. Baldwin, William S. Baldwin, and Fred D. Baldwin (hereinafter referred to as the Baldwins), stated support for

the unitization of the field and the initiation of partial pressure maintenance and enhanced recovery operations that would be beneficial to all interest owners.

Representatives for Hatters Alabama Company and LeBoc Mobile Company (hereinafter referred to as Hatters/LeBoc) expressed agreement to the need for unitization so that a pressure maintenance program may be instituted.

A representative of George W. Radcliff (hereinafter referred to as Mr. Radcliff) stated that Mr. Radcliff was not opposed to unitization.

An expert witness for Richland Exploration Company, Inc. (hereinafter referred to as Richland) stated that the Hatter's Pond Field should be unitized and pressure maintenance be initiated as soon as possible.

T. K. Jackson III (hereinafter referred to as Mr. Jackson) stated that the Board has a duty to unitize the field.

Dr. George L. Wallace (hereinafter referred to as Dr. Wallace) favors the unitization of the field.

A representative of 150 small interest owners in Section 28, Township 2 South, Range 1 West (hereinafter referred to as Hildreth et al), stated that his clients were in agreement that unitization of the Hatter's Pond Field is appropriate.

Additionally, the Board has received numerous letters and statements of support from a wide cross section of interest owners in the Hatter's Pond Field that unitization is appropriate and necessary.

Findings

The Board has heard all the testimony and has carefully reviewed all evidence in regard to the need for unitization, and hereby finds:

2. That there is an unquestionable need for the Hatter's Pond Field to be unitized.

3. That no party presented evidence to refute Petitioner's averments that unitization of the Hatter's Pond Field is needed for the purpose of initiating and maintaining a partial pressure maintenance program.

4. That Petitioner, who operates all but one producing well in the Hatter's Pond Field, has been a prudent operator and would be the major operator with about 97.7 percent of the working interest ownership in the proposed unit area. Therefore, Petitioner should be designated as the initial unit operator, when a Unit Agreement is approved by the Board, with the exclusive right to conduct unit operations.

5. That unitization is necessary because of the unique geologic characteristics of the Hatterr's Pond Field and the hostile geologic environment for drilling and production evident therein. Unitization would be beneficial for the continuation of successful primary recovery operations and is needed for the successful initiation and maintenance of secondary recovery operations. Unitization is necessary in order to prevent the potential loss of recoverable hydrocarbons and in order to prevent the drilling of unnecessary wells in the proposed unit area.

6. That unitization of the Hatter's Pond Field is in the interest of conservation and that secondary recovery will result in an appreciable increase in recovery of hydrocarbons from said field. The increased recovery of hydrocarbons from the field is in the best interest of the mineral interest owners and the State of Alabama.

7. That Petitioner has clearly demonstrated the need to unitize the Hatter's Pond Field and initiate gas cycling secondary recovery operations as expeditiously as possible. An undue delay of unitization and the initiation of enhanced recovery procedures will result in the irrecoverable loss of hydrocarbons and potential harm to the reservoir.

II.

PARTICIPATION FORMULA

Pore Volume

Petitioner presented evidence that the tract participation formula for the proposed unit area should be based 100 percent on pore volume (See Exhibit 2 in Appendix). An expert geologic witness for Petitioner defines pore volume as the storage space in a rock expressed in porosity feet. The pore volume is determined by multiplying the net pay feet by the average porosity as measured and calculated for each foot of pay.

Petitioner maintains that the pore volume formula is consistent with Section 9-17-83, *Code of Alabama* (1975) which states that tract allocation shall be based on the relative contribution which each tract or interest is expected to make during the course of operations, to the total production of hydrocarbons as allocated.

Expert witnesses for Petitioner contended that the 100 percent pore volume formula is the best method for determining tract participation because it best represents what each individual tract in the proposed unit area can be expected to contribute to future production from the proposed unit. Petitioner asserts that a tract's contribution to past production is not important and that the determining factor should be a tract's contribution to future production. The determining factor should be what a tract, not a well in the tract, is expected to contribute to future production.

An expert engineering witness for Petitioner contends that 100 percent pore volume is the best method of allocation because of the hostile geologic environment to drilling and production in the Hatter's Pond Field, which has resulted in the drilling of numerous dry holes and the abandonment of several producing wells; therefore, the testing and completion procedures for wells in the field have been inconsistent, due to varying lengths of tests, different completion techniques, and different intervals perforated. The witness further stated that some wells are producing only from the Smackover Formation, and others only from the Norphlet Formation.

Petitioner contends that pore volume is the best participation formula for allowing a redetermination of each tract's relative contribution as new wells are drilled in the proposed unit area.

A representative of Creola testified that the 100 percent pore volume formula is the best method for determining the relative contribution for each tract in the proposed Hatter's Pond Field Unit.

Mrs. Butler supports Petitioner's 100 percent pore volume formula. Richland and Dr. Wallace did not make a statement in opposition to Petitioner's proposed formula for tract participation.

Several opposition parties assert that the 100 percent pore volume formula will not satisfy the requirement of Section 9-17-83 of the *Code* in that the allocation of production to each separate tract must be based upon the relative contribution which each tract is expected to make during unit operations. They maintain that, in order to protect correlative rights of mineral interest owners, the allocation formula must be altered.

Several opposition parties to the Petitioner's proposed formula contend that, under the proposed tract participation formula, certain tracts, including tracts 1500, 1700, and 3500, would receive less from unitization and enhanced recovery operations than they are presently receiving or would receive under continued primary recovery operations. Opposition parties maintain that the inequities of the Petitioner's proposed formula are highlighted by the fact that tract 1100, with no proven production by a well, would receive a higher participation percent than tract 1700, on which production has been proven by the drilling of a well. Therefore, opposition parties assert that the proposed unitization is not protecting the correlative rights of mineral interest owners, and that the proposed unitization is not in compliance with Section 9-17-82 of the *Code* which provides that unitization will not result in additional costs that exceed the value of the additional hydrocarbons that will be recovered. Amax contends that mineral interest owners in tract 3500 will receive less financial benefit from secondary recovery operations than under continued primary operations.

Expert witnesses for opposition parties testified that the heterogeneity and erratic nature of the Hatter's Pond reservoir, which consists of both a carbonate and sandstone unit having distinct geological and engineering characteristics, does not warrant having a participation formula based on one single factor (100 percent pore volume).

Several opposition parties maintain that the heterogeneous nature of the reservoir leads to inherent inaccuracies in the mapping of pore volume between the widely spaced wells in the field, and that these inaccuracies have been demonstrated by the drilling of wells which have encountered significantly different pore volumes that previously mapped for the well locations. They further contend that not a single example can be cited where a well encountered pore volume that matched the pore volume assigned to the well location prior to drilling. As a consequence of the inherent difficulties in accurately estimating pore volume, many states use other factors in the establishment of a participation formula. Opposition parties further assert that the demonstrated unpredictability of the reservoir of the Hatter's Pond Field substantiates the inaccuracy and unreliability of using any single factor as 100 percent of the participation formula.

Several opposition parties stated that the sparse density of actual pore volume data points (wells) available in the proposed unit area considerably limits the reliability in projecting pore volumes between the widely spaced wells in this field. They further contend that most unitizations on a fieldwide basis have been conducted for fields developed on a 40-acre spacing pattern which provides considerably more information about the characteristics of a reservoir and makes unitization on pore volume determinations much more reliable. The Hatter's Pond Field, a gas-condensate field, has been developed on a 640-acre spacing pattern.

Representatives for the opposition parties maintain that significant amounts of critical engineering and production history data are available for the Hatter's Pond Field and the use of a 100 percent pore volume formula totally ignores these types of data. The opposition parties assert that engineering data give insight into what is

present in the areas between wells and that the participation formula for many unitized fields has some engineering component.

Expert witnesses for the opposition testified that the proposed tract participation formula does not take into account nonrecoverable hydrocarbons; nonhydrocarbons, such as connate water, hydrogen sulfide, and carbon dioxide; product value of gas; or quality of gas.

Productive Surface Acres

Petitioner argues that a productive surface acre factor in the participation formula is not justified for the proposed unit area and that the highly variable reservoir thickness in the field makes productive surface acres an inappropriate factor because an acre with 1 foot of net pay should not be given the same credit as an acre with 300 feet of net pay. Petitioner further maintains that introducing a productive surface acre factor into the participation formula would not protect the correlative rights of the mineral interest owners in the proposed unit area.

A representative for Mr. Radcliff contends that as a consequence of the inherent difficulties in accurately estimating pore volume, many states use other factors, such as productive surface acres, in the establishment of participation formulas. Mr. Radcliff maintains that weight should be given to a productive surface acre factor in the participation formula. Mr. Radcliff further contends that a productive surface acre factor is necessary to protect the correlative rights of mineral interest owners in the proposed unit area. Given all the geologic uncertainties present in the Hatter's Pond Field, Mr. Radcliff maintains that the use of productive surface acres, as a factor in the determination of tract participation, would introduce some measure of certainty into the formula.

Productivity

Expert witness for Petitioner aver that past production does not determine what a tract's future contribution will be to the proposed unit and that a productivity factor is indicative of well contribution and not tract contribution. Petitioner contends that pore volume best represents what each tract in the proposed unit area can be expected to contribute to future production; and that pore volume, as mapped, is not 100 percent accurate. Petitioner, however, maintains that there is no method presently available which can predict future contribution with 100 percent accuracy. A representative for Petitioner maintains that pressure production histories of the wells in the field, and liquid content of fluid produced, gives an inaccurate estimate of what each tract in the proposed unit will contribute to future unit production because there are differences among the wells with respect to the thickness of pay encountered; the amount of pay perforated; the depth of the perforations; the type of acid treatment used; the dates of completion; the number of days produced; the length, size, and configurations of the tubing strings; the amount of scale buildup; the separator size; wellhead pressure; the size and length of flowlines; and the separator temperature. Petitioner contends that all these well-related factors affect past production history and/or liquid content of the fluid produced, and the variations in these factors from well to well make a comparison of the present production histories and the fluids produced from the various wells in this unit an unreliable method for predicting future contribution.

A representative for Petitioner argues that cumulative production does not take into account the variability of when wells were completed nor the days that the wells produced; and that cumulative production, as a factor in the participation formula, would not protect the correlative rights of the mineral interest owners.

Petitioner maintains that well capacity is a measure of well contribution, in that it exaggerates one particular area in each of the tracts that has a producing well on it. Further, Petitioner contends that there have been no tests run in this field to determine the "highest tested capacity" for wells capable of making their allowable.

A representative for Amax contends that a production history factor in the participation formula is necessary for the tract participation to be fair and equitable. He further stated that production history shows what a well will produce and what the tract will contribute, and that the use of production history for at least 50 percent of the formula would mitigate errors in estimates of pore volumes between wells.

A representative for the Baldwins contends that the participation formula should be balanced between well deliverability (a productivity factor) and pore volume. He further stated that the remaining reserves of the field can be determined by productive history and bottom hole pressure analysis, and that one of the most important single elements of what a tract can be expected to contribute is the ability of that tract to produce. An expert engineering witness for the Baldwins testified that production from a well indicates well performance and the nature of the producing formation that is exposed to the well bore. He maintains that production history is the most accurate factor in predicting what a tract will contribute to the total unit production, and that production can be measured. He contends that due to the variability of time intervals of continuous production for the various wells and the mechanical problems of some wells, a production per day factor could be appropriate for the proposed unit. A representative for the Baldwins asserts that in-place hydrocarbons have no value if they cannot be produced, that the rate and volume of production greatly affects the

total value of a tract, and that deliverability, or the ability of a given well (tract) to produce, is a measurable factor that should be given at least equivalent weight to pore volume in the determination of an equitable tract participation factor. He maintains that well deliverability reflects a tract's proven ability and capacity to contribute to unit production and a tract's productive quality and ability and, therefore, is a good measure of a tract's expected relative contribution toward unit production. He contends that the addition of deliverability to the tract participation formula will insure the protection of the correlative rights of the mineral interest owners in the proposed unit area.

Mr. Jackson advocates that an average daily production factor is a reasonable indicator of future contributions at the Hatter's Pond Field because the Petitioner has essentially been the sole operator of the field and has a fiduciary duty to see that each tract (well) is produced in an equitable manner.

A representative for Hatters/LeBoc maintains that the participation formula for the proposed unit needs to include 50 percent for highest tested capacity (a productivity factor), and 50 percent for adjusted pore volume. He stated that the highest tested capacity is a well's test for allowable purposes and should reasonably reflect the maximum productive capacity of a well. An expert engineering witness for Hatters/LeBoc testified that pressure-production history is important in determining what a tract may contribute to future production. He maintains that a capacity factor would help take into consideration the connate water that is not taken into consideration in the pore volume formula presented by Petitioner.

Findings

The Board has heard all of the testimony and carefully reviewed all of the evidence, and in regard to a

participation formula hereby finds:

8. That for the Hatter's Pond Field, a tract participation formula based 100 percent on pore volume does not protect the correlative rights of the mineral interest owners in the proposed unit area. This gas-condensate field has been developed on a 640-acre spacing pattern resulting in large distances between wells. Therefore, the wide distribution of wells in the field (which vary up to more than a mile) and the unpredictable variations in reservoir porosities and permeabilities do not allow for the accurate mapping of pore volume. Furthermore, the inequities resulting from a 100 percent pore volume formula would not be significantly reduced by the drilling of a few additional wells within the proposed unit area and the re-determination of tract participation by the remapping of pore volume from the data provided by these wells.

9. That the heterogeneity of the Hatter's Pond Field reservoir prevents the accurate determination of pore volume, and this fact has been clearly demonstrated by the inability to accurately predict the pore volume for wells. The demonstrated heterogeneous nature of the Hatter's Pond Field reservoir, and the proven inability to predict pore volume as new wells are drilled, requires the use of a factor in addition to pore volume.

10. That engineering production data available for the Hatter's Pond Field is not considered by using a 100 percent pore volume formula.

11. That productive surface acres, as a factor for tract participation in the proposed Hatter's Pond Field Unit, is not acceptable because of the drastic changes in reservoir thickness from one area of the field to another. Assigning equal participation values to a tract underlain by a few productive reservoir feet and a tract underlain by hundreds of

productive reservoir feet is not equitable and would not protect the correlative rights of the mineral interest owners in the proposed unit area. In the Hatter's Pond Field, productive surface acres as a factor in determining tract participation is not in compliance with Section 9-17-83 of the *Code* because productive surface acres is not a fair estimate of what each tract could reasonably be expected to contribute to future production.

12. That a fair and reasonable participation formula, and one that will protect the correlative rights of mineral interest owners in the proposed Hatter's Pond Field Unit, is a tract participation formula that is weighted in favor of pore volume, but which also includes a productivity factor.

13. That cumulative production is not appropriate as a productivity factor for the proposed Hatter's Pond Field Unit because it does not take into account the varying dates that wells commenced production and does not take into account the actual days that each well produced hydrocarbons. Therefore, a cumulative production factor would not protect the correlative rights of the mineral interest owners.

14. That well deliverability, as measured by a standardized capacity test, is not appropriate as a productivity factor for the proposed Hatter's Pond Field Unit due to the risk, cost, and time factors of conducting such tests. Therefore, a well deliverability factor would not protect the correlative rights of the mineral interest owners.

15. That a tract's average daily production rate, as determined from a well's best month of production on the tract, is appropriate as a productivity factor for the proposed Hatter's Pond Field Unit. This productivity factor, in proper combination with a pore volume factor, would more

accurately determine a tract's relative contribution than a pore volume factor alone.

16. That a fair and reasonable tract participation formula for a Hatter's Pond Field Unit is a formula that consists of a 60 percent pore volume factor and a 40 percent productivity factor. The productivity factor is defined as a tract's average daily production rate as determined from a well's best month of production on the tract. The productivity factor of the participation formula shall be determined prior to the effective date of unit operations within the unit area ultimately approved by the Board. Such a participation formula protects the correlative rights of interested parties, and is based upon the relative contribution which each tract or interest is expected to make during the course of unit operations. Section 9-17-83, *Code of Alabama* (1975).

III.
SUGGESTED PORE VOLUME ADJUSTMENTS

Lithologic Differences

Petitioner maintains that the Smackover and Norphlet Formations are one reservoir but are mapped separately because of differences in lithology and character, and that the Unitization Geological Subcommittee agreed to treat the Smackover and Norphlet in the same manner in regard to porosity and permeability. An expert witness for Petitioner contends that although the Smackover has four times the average permeability of the Norphlet, the wells perforated in the Norphlet are better producers than those perforated in the Smackover. He further stated that net pay thickness tends to be much greater in the Norphlet than in the Smackover. An expert engineering witness for Petitioner testified that the medium (lithology) in which porosity and permeability

exists does not effect these rock properties and that any affects that different lithologies would have on storage and movement of fluids are already taken into account in the measurements of the porosity and permeability (Getty Exhibit HO-18).

An expert geologic witness for Mr. Radcliff testified that Petitioner's unitization plan is the first he has observed where the unitized formation is composed of two different lithologies and that different reservoir characteristics create many problems. He maintains that porosity is higher in the Smackover than in the Norphlet and porosity varies greatly within each formation. He further stated that the Smackover has four times the average permeability of the Norphlet. All parties agreed that there are lithologic differences between the Smackover and Norphlet.

Net Pay Cutoffs

Petitioner asserts that the net pay cutoffs of 6 percent porosity and 0.1 millidarcy permeability for both the Smackover and the Norphlet were recommendations of the Unitization Geologic Subcommittee and that the net pay cutoffs are reasonaable for these rock units because cores from the field indicate communication across the Smackover-Norphlet contact. An expert engineering witness for Petitioner testified that fluid originally stored in 0.1 millidarcy rock will flow to the wellbore with relative ease, if there are more permeable flow paths available, as is the case in the Hatter's Pond Field (Getty Exhibit HO-18). Petitioner maintains that no party has offered any evidence that justifies using net pay cutoffs different from those agreed to by the Unitization Geological Subcommittee. An expert witness for Creola avers that the net pay cutoffs were agreed to by the Unitization Geological Subcommittee, and that the cutoffs are fair and reasonable.

Therefore, he contends that changes are unnecessary.

An expert geologic witness for Hatters/LeBoc testified that he agrees with Petitioner's net pay cutoffs for the Smackover, but maintains that the net pay cutoffs for the Norphlet should be 9 percent porosity and 1.0 millidarcy permeability as evidenced by the plugged and abandoned Getty Boyd 22-4 No. 1 well (Permit No. 2381-B). The Smackover was absent in the Boyd well and completion attempts in the Norphlet failed, even though some Norphlet net pay porosity was indicated to be present in the core for this well. Hatters/LeBoc contends that no substantial evidence has been presented to indicate that the Norphlet will contribute hydrocarbons from zones with 6 percent porosity and 0.1 millidarcy permeability. An expert geologic witness for Mr. Radcliff testified that he agrees with the net pay cutoffs proposed by Hatters/LeBoc and contends that Petitoner's pore volume map gives more credit to the less permeable Norphlet than is technically supportable. The Baldwins expressed opposition to Petitioner's net pay cutoffs but offered no recommended changes.

Water Saturation

An expert engineering witness for Petitioner testified that pore volume is the volume available for the storage of gas and the irreducible or connate water. He further maintains that the Unitization Geological Subcommittee considered and then decided against using water saturation. Petitioner contends that there would be uncertainties in the calculation of water saturation values, including the nonhydrocarbon constituents in the pore spaces of the formations and the different lithologies of the formations (Getty Exhibits HO-23 and HO-24), and that attempts to make the adjustments would not increase the accuracy of determining a tract's relative contribution.

Petitioner further asserts that this engineering witness is the only qualified log analyst to testify on this matter. Petitioner also maintains that none of the alternative formulas proposed by the opposition parties directly adjusts for connate water saturation. An expert witness for Creola testified that connate water increases toward the gas-water contact and probably increases with lower permeability. He further contends that the salt encountered in some of the wells effects the accuracy of water saturation determinations calculated from geophysical logs. Creola agrees with Petitioner that attempts to calculate connate water would not improve the accuracy of determining relative contribution.

None of the opposition parties offered any calculations as to the actual connate water present in any individual well in the proposed unit area. An expert witness for Mr. Radcliff testified that Petitioner's pore volume map is inaccurate primarily because it does not reflect the amount of connate water in the available pore space. He further contends that the connate water is considerably higher in the Norphlet Formation than in the Smackover. An expert witness for Hatters/LeBoc testified that the inclusion of a productivity factor in the participation formula could help offset Petitioner's failure to include water saturation. Mr. Radcliff recommends that water saturation adjustments be made only if the Radcliff proposed participation formula is not adopted.

Pressure-Production History, Remaining Recoverable Unitized Substances, and Present Worth of Unitized Substances

Petitioner maintains that pressure-production history, remaining recoverable unitized substances, and present worth of unitized substances adjustments to pore volume would not increase the accuracy of pore volume

determinations for the proposed unit area. Petitioner further contends that large variations among the wells with respect to the thicknesses of pay encountered; the amount of pay perforated; the depth of the perforations; the type of acid treatment used; the dates of completion; the number of days produced; the length, size, and configuration of the tubing strings; the amount of scale buildup; the separator size; the wellhead pressure; the size and length of the flow lines; and the separator temperature make these factors inappropriate as adjustments to pore volume.

An expert engineering witness for Hatter/LeBoc contends that adjustments for pressure-production history, remaining recoverable unitized substances, and present worth of unitized substances would increase the accuracy in the determination of pore volume. He maintains that, based on the pressure-production history of some wells, these is an indication that perforated intervals are in communication with less pore volume than what has been mapped by the Unitization Geological Subcommittee. He further stated that the Unitization Geological Subcommittee's mapping of pore volume does not take into account what each tract has already produced and what each tract could be expected to contribute to future production. He also asserts that due to the variations in the value of substances produced from wells, a present worth of unitized substances adjustment should be included.

Log Versus Core For Pore Volume Calculation in Tract 3500

Petitioner maintains that the decision not to include pore volume data from the Getty Creola Minerals 35-11 No. 3 well (Permit No. 3277) for determining the pore volume for tract 3500 is consistent with the Unitization Geological Subcommittee's recommendations. Petitioner further contends that the core data for the Getty Creola Minerals

35-11 No. 2 well (Permit No 2258) provides more accurate information for determining pore volume than the well logs for the 35-11 No. 3 well which was not cored.

Expert witnesses for Hatters/LeBoc and Amax testified that the Unitization Geological Subcommittee did not include pore volume estimates determined from the well logs for the 35-11 No.3 well. They contend that the well logs for the No. 3 well indicate higher pore volume than encountered in the core of the No. 2 well (Amax Exhibits P and Q).

Findings

The Board has carefully reviewed all testimony and evidence relating to suggested pore volume adjustments and hereby finds:

17. That the geologic and engineering evidence indicates that the affects of different lithologies on the storage and movement of hydrocarbons are already taken into account in the measurements of porosity and permeability in the Hatter's Pond Field. Therefore, the Smackover and Norphlet Formations should be given the same pore volume credit in regard to lithology alone.

18. That the weight of the geologic and engineering evidence indicates that net pay cutoffs of 6 percent porosity and of 0.1 millidarcy permeability in the Hatter's Pond Field, as proposed by Petitioner, are fair and reasonable. These net pay cutoffs adequately define the lowermost productive limits for the Smackover and Norphlet Formations in the proposed unit area. No opposition party presented any substantial evidence to refute Petitioner's contention that the porosity and permeability cutoffs are appropriate for the proposed unit. Furthermore, the failure to complete the Boyd 22-4 well (Permit No. 2381-B) as a commercial

producer from the Norphlet Formation is not sufficient evidence to justify a change in the net pay cutoffs for this formation, because this failure may have been related to conditions other than Norphlet porosity and permeability.

19. That the weight of the evidence indicates that an adjustment for water saturation should not be made because it would not improve the pore volume estimates of the hydrocarbons beneath each tract in the Hatter's Pond Field. No party presented any calculations on the actual connate water present in any well, and no party presented evidence to demonstrate that calculations of water saturations would improve the pore volume estimates of hydrocarbons beneath each tract.

20. That the weight of the evidence indicates that adjustments to pore volume for pressure-production history, remaining recoverable unitized substances, and present worth of unitized substances should not be made because these adjustments would not increase the accuracy of pore volume estimates of hydrocarbons or hydrocarbon value beneath each tract in the Hatter's Pond Field.

21. That in the mapping of pore volume for tract 3500 in the proposed Hatter's Pond Field Unit, Petitioner used the best available data for the determination of the pore volume attributable to said tract. Porosity and net pay thickness values are more accurate when determined from cores than from estimates based on calculations from wire line logs, especially for tract 3500 where two wells were drilled in close proximity.

IV.
MAPPING ASSUMPTIONS

Lack of Use of Wedge Zone on Salt Ridge

Petitioner maintains that the Unitization Geological Subcommittee recommended the use of a vertical salt face as the interpretation for the eastern boundary of the proposed unit area. Petitioner contends that this recommendation was the result of a compromise because adequate control to determine the exact location, shape, and slope of the salt wedge was not available. An expert witness for Creola maintains that the geologic mapping of the eastern edge of the proposed unit area was based on compromises made by the Unitization Geological Subcommittee. He further contends that the angle of the salt face could only be established in Section 15, Township 2 South, Range 1 West, and that the slope of the salt may vary in other areas along the eastern edge of the proposed unit area. An expert witness for the Baldwins agreed with Petitioner on the use of a vertical salt face. Several opposition parties had no objection to the use of a vertical salt face.

An expert witness for Mr. Radcliff maintains that the wedge zone of the salt ridge should be mapped and avers that Petitioner's pore volume map (Getty Exhibit 11) does not account for the western slope of the salt mass, thereby exaggerating the pore volume allocation to tracts situated along the eastern boundary of the proposed unit area.

Zero Porosity Limit

An expert witness for Petitioner testified that the productive limits for the Smackover and Norphlet Formations (Getty Exhibits 5 and 6) are based on gas-water contacts in the Norphlet Formation (Getty Exhibit 2). He

further contends that the Unitization Geological Subcommittee recommended that a projection of the Norphlet gas-water contact to the Smackover Formation would represent a reasonable down-dip productive limit of the Smackover. He further maintains that the gas-water contact projected from the Norphlet to the Smackover is lower than the lowest known gas seen in the Smackover in any well on the west side of the proposed unit area. Petitioner also contends that only Mr. Radcliff has recommended that these limits be changed. Expert witnesses for Petitioner assert that Mr. Radcliff's proposed zero porosity productive limit is technically inaccurate. These witnesses further maintain that Mr. Radcliff's productive limit runs through four dry holes.

An expert witness for Mr. Radcliff testified that the Smackover and Norphlet are separated by a nonpermeable section and that a water level cannot physically be projected from one formation into the other (Radcliff Exhibits 3 and 3A). He further contends that the Smackover has been found to be either porous and productive, or tight and non-productive. He, therefore, maintains that the down-dip limit of the productive Smackover Formation is controlled by a pinchout of Smackover porosity (Radcliff Exhibit 9).

Mapping More Pore Volume Than Present in Any Well

Petitioner contends that the Unitization Geological Subcommittee agreed not to map more net pay than present in any well and not to map more porosity than present in any well. Petitioner further maintains, however, that there was no agreement not to map more total pore volume than present in any well. Expert witnesses for Petitioner assert that the mapping of pore volume, which was not performed by the Unitization Geological Subcommittee, was accomplished by an appropriate mapping technique (i.e. combining net pay and porosity maps), and that this

technique is more accurate than mapping pore volume alone, especially since each formation is mapped separately. Creola supports Petitioner's mapping of higher net pore volume values than present in any well.

Several opposition parties maintain that the mapping of more pore volume than present in any well is not a proper mapping technique for determining tract participation for unitization (See Exhibit 2 in Appendix). An expert geologic witness for Mr. Radcliff testified that he would not advocate the mapping of higher pore volume than present in any well, and that, historically in unitizations, this mapping technique is never used. An expert engineering witness for the Baldwins testified that he has been involved in the unitization of fields in other states and that Petitioner's plan is the first time he has seen a committee map above a point that is the highest point encountered in a particular well bore, irrespective of the technique used by Petitioner to construct its pore volume map (Getty Exhibit 11).

Findings

The Board has carefully reviewed all testimony and evidence related to mapping assumptions and hereby finds:

22. That the weight of the evidence indicates that data are insufficient to accurately map the slope of the salt along the eastern boundary of the Hatter's Pond Field and, therefore, the use of a vertical salt face is acceptable.

23. That the weight of the available evidence, including data provided by dry holes and wells penetrating salt, supports Petitioner's interpretation of the productive limits of the Hatter's Pond Field, excluding the area of Section 21, Township 2 South, Range 1 West. Furthermore, Petitioner's projection of a gas-water contact for the Norphlet Formation to the Smackover Formation results in a

productive limit that is lower than the lowest known gas found in the Smackover, and this mapping technique is a fair and reasonable method of defining productive limits of the Hatter's Pond Field.

24. That the evidence clearly demonstrates that mapping of pore volume values higher than actually present in any well is not an acceptable mapping technique in the Hatter's Pond Field. The heterogeneous nature of the reservoir, and the documented failures of predicting pore volume, demonstrates that the mapping of pore volume higher than present in a well is inappropriate because these higher values are unproven to be present anywhere in the field.

V.

UNIT AREA

Sections 8 and 11, Township 2 South, Range 1 West and Sections 27 and 28, Township 1 South, Range 1 West

Petitioner avers that portions of Sections 8 and 11, Township 2 South, Range 1 West, and portions of Sections 27 and 28, Township 1 South, Range 1 West, should be part of the proposed unit area (See Exhibit 3 in Appendix). Expert witnesses for Petitioner testified that the geologic and engineering data derived from wells in, or near these sections, indicates that portions of said sections will contribute hydrocarbons to the proposed unit and should, therefore, be given a tract participation factor corresponding to each section's relative contribution even though said sections do not currently have a producing well thereon.

Petitioner maintains that the Unitization Geologic Subcommittee agreed that it is reasonaable to include portions of said sections in the proposed unit area and that

these partial sections would contribute production to the proposed unit. Petitioner contends that, although some of the opponents have questioned the tract participations for some of the tracts in the proposed unit area, no opposition party has requested that any of the said tracts be excluded from the proposed unit area.

Creola supports Petitioner's contention that portions of Sections 8 and 11, Township 2 South, Range 1 West, and protions of Sections 27 and 28, Township 1 South, Range 1 West, should be included in the proposed unit area and should be given a tract participation factor corresponding to each section's relative contribution to the proposed unit.

An expert geologic witness for Hatters/LeBoc interprets the productive limits in Section 11, Township 2 South, Range 1 West (Hatters/LeBoc Exhibit 1), in a manner similar to Petitioner's interpretation (See Exhibit 3 in Appendix).

An expert geologic witness for Mr. Radcliff interprets the productive limits in Section 11, Township 2 South, Range 1 West (Radcliff Exhibit 9), in a manner similar to Petitioner's interpretation. For Section 8, Township 2 South, Range 1 West, Mr. Radcliff's productive acreage outline map (Radcliff Exhibit 8) indicates that the productive limit extends significantly further to the west than the productive limit as shown by Petitioner's Exhibit 11.

An expert geologic witness for Richland interprets the productive limits in Sections 27 and 28, Township 1 South, Range 1 West (Richland Exhibits 4 and 5), in a manner similar to Petitioner's interpretation.

Expert geologic witnesses for Dr. Wallace interpret the productive limits in Sections 27 and 28, Township 1 South,

Range 1 West (Wallace Exhibit 1), in a manner similar to Petitioner's interpretation.

Sections 25, 26, and 36, Township 1 South, Range 1 West

Petitioner maintains that the structure and productive limits of the proposed unit area support the exclusion of Sections 25, 26, and 36 from said unit.

An expert witness for Petitioner avers that the Smackover and Norphlet Formations were absent in the Smith 36-5 well (Permit No. 2608) in Section 36, Township 1 South, Range 1 West, and that the Unitization Geological Subcommittee reviewed and considered the information from this well, in addition to the information from all other wells in the area, and determined that the productive limits for the Smackover-Norphlet Gas Pool in the Hatter's Pond Field area are as depicted by Petitioner (Getty Exhibits 5 and 6). Petitioner contends that these exhibits illustrate that all of Sections 25, 26, and 36 are structurally below the -18,300 foot productive limit line and are, therefore, entirely outside of the limits of production for the Smackover-Norphlet Gas Pool of the proposed unit area.

Dr. Wallace contends that a portion of Section 25, and portions of adjacent Sections 26 and 36, Township 1 South, Range 1 West, should be included in the proposed unit area. Expert witnesses for Dr. Wallace assert that portions of these sections are underlain by hydrocarbons and that these sections are being drained by one or more wells located in the proposed unit area; furthermore, that the exclusion of these sections from the proposed unit area is not based on hard geological data, but instead is based on a structural interpretation that does not take into account the tectonic influence of the salt and does not follow contouring procedures consistent with good mapping concepts and practices. Witnesses for Dr. Wallace further

contend that due to the substantial amount of past drainage and a wide diversity of ownership it would be economically wasteful and virtually impossible to drill a well in Section 25.

Expert witnesses for Dr. Wallace presented testimony and exhibits, including a structure map of the Smackover Formation (Wallace Exhibits 1, 1A, 1B, and 1C), and a structure map of the Norphlet Formation (Wallace Exhibit 2). Dr. Wallace maintains that these exhibits depict portions of Sections 25, 26, and 36 to be within the productive limit of the field as defined by the -18,300 foot structural contour. Expert witnesses for Dr. Wallace contend that the structural configuration of the Smackover (Wallace Exhibit 1) is much more elongated in a northeastward direction along the fault, than as interpreted by Petitioner (Getty Exhibit 5) or as interpreted by Richland (Richland Exhibit 4), thus indicating that the Smackover lies structurally higher than -18,300 feet in portions of Sections 25, 26, and 36. Expert witnesses for Dr. Wallace also presented testimony and exhibits to support their contention that reservior grade porosity is potentially present beneath Section 25. These exhibits include pore volume maps (Wallace Exhibits 3, 4, and 5), a Smackover porosity map (Wallace Exhibit 7), and a porosity cross section (Wallace Exhibit 8).

An expert witness for Richland testified that a portion of the Northwest quarter of Section 36, Township 1 South, Range 1 West should be included in the proposed unit. Richland contends that the information derived from a plugged and abandoned dry hole in the Northeast quarter of Section 36, the Stone Oil Corporations' Smith 36-5 (Permit No. 2608), in conjunction with the data from other wells in the northern part of the field, indicates that a portion of the Northwest quarter of Section 36 is underlain by the Smackover-Norphlet Gas Pool of the Hatter's Pond

Field area. An expert witness for Richland contends that the structural configuration (Richland Exhibit 4) of the Smackover Formation for the northern part of the proposed unit is more elongated in a northeasterly direction than the structural interpretation of Petitioner (Getty Exhibit 5). Richland's witness maintains that a portion of the Northwest quarter of said Section 36 is structurally above the -18,300 foot contour, which is above the productive limit in this part of the field (Richland Exhibit 4).

Sections 21, 22, 28, and 33, Township 2 South, Range 1 West

Petitioner avers that its proposal to unitize Hatter's Pond Field, even though it excludes two sections which are presently a part of the field (Sections 21 and 28, Township 2 South, Range 1 West), is in compliance with Alabama law which authorizes the unitization of a portion of a field. *See* Section 9-17-82, *Code of Alabama* (1975). Petitioner, therefore, maintains that there are no legal requirements to include either Sections 21 or 28, assuming that correlative rights are protected by an allowable scheme and inequities are not caused.

Expert witnesses testified for Petitioner that the Section 21 well (Getty Baldwin 21-7, Permit 2222-B) is completed in the same reservoir as the main part of the field. Petitioner avers that due to serious disagreement as to the geology in the area of Sections 21 and 22, the Unitization Geological Subcommittee members abandoned their efforts to map and interpret the geology of this area, and therefore, the geologic interpretation of Sections 21 and 22 is that of the Petitioner alone.

Expert witnesses for Petitioner maintain that the exclusion of Section 21 would not have any adverse effects on

the operation of the proposed unit, and they assert that the correlative rights of the interest owners in Section 21 will be protected by the proposed allowable plan. Petitioner stated plans to drill a production well just north of Section 21 and in the South half of Section 16, and an expert witness for Petitioner testified that this production well should create a no-flow boundary and that there should be no adverse effect on the Baldwin 21-7 well; and that if there was any effect, it would be to increase its recovery of hydrocarbons.

Expert witnesses for Petitioner contend that Section 28 is not a part of the main Hatter's Pond Field reservoir and that pressure communication between the Exxon Corporation Wilkie Gas Unit 28 No. 1 well (Permit No. 2746) and other wells in the field must be through a water leg, rather than the gas column, because their geologic interpretation indicates that a piercement salt ridge extends through adjacent Section 21 located north of the Wilkie Well. A representative for Petitioner stated that neither it nor Exxon Corporation, the operator of the Wilkie well, object to the exclusion of said well and that the correlative rights of all parties can be fully protected by the proposed allowable system (Getty Exhibit 24, pp. 7-12).

Petitioner maintains that attempts to include Sections 21, 28, and 33 into the proposed unit will delay unitization because the mapping of this area is disputed and because of the time that will be needed to evaluate the information obtained from the additional well (Getty Baldwin 21-15 No. 1 well, Permit No. 3697), currently being drilled in Section 21. Furthermore, a representative for Petitioner stated that the inclusion of these sections into the proposed unit would require a time consuming revision of the present plans for the gas cycling project.

The Baldwins, Hatters/LeBoc, Amax and Hildreth et al had opposition to Petitioner's proposed southern unit area boundary. The Baldwins testified that they support the concept of unitization. They stated, however, that they are opposed to Petitioner's proposed 100 percent pore volume participation formula for allocation of production to the separately owned tracts because inequities exist and thus they feel they have been forced to ask that Section 21, Township 2 South, Range 1 West, not be included in the proposed unit area. The Baldwins assert that Section 21 would be severely penalized under Petitioner's proposed 100 percent pore volume participation formula and maintain that a fair and equitable allocation formula would allow Section 21 to become part of a proposed unit which they advocate would be favorable for the protection of correlative rights. The Baldwins further maintain that the Unitization Geological Subcommittee abandoned efforts to map Section 21 and that subsequently acquired data from a 3-Dimensional seismic survey have enabled Petitioner to remap and revise the geologic interpretation of the southern area of the field, resulting in the permitting of a new well now being drilled in the South half of Section 21 (Getty Baldwin 21-15 No. 1 well, Permit No. 3697).

Hatters/LeBoc advocates the inclusion of Sections 21, 28, and 33 into the proposed unit area. They maintain that no evidence has been presented to the Board by which a determination can be made of the just and equitable share of gas production for the proposed unit as compared with the just and equitable share of gas production for Sections 21 and 28 and that the proposed allowable system does not represent a just and equitable allocation of production. Hatters/LeBoc also questions the accuracy of Petitioner's geologic maps of the Section 21 area and point out that Petitioner has proceeded with its petition for unitization even through new significant information was made

available by the completion of a 3-Dimensional seismic survey in the area prior to the November 1982 unitization hearing. They assert that Petitioner proceeded with its petition with the knowledge that the results of this seismic survey created doubt as to the accuracy of Petitioner's structural interpretation of the Section 21 area and doubt as to the existence of the salt ridge interpreted to be present in this section (Getty Exhibits 5 and 6).

Hatters/LeBoc further maintains that the maximum recovery of hydrocarbons will be realized only if the entire field area is unitized and that would be the most beneficial plan from an economic, engineering, and a conservation standpoint. They further assert that Section 28 will benefit from a gas cycling program and that the pressure information from the Exxon Wilkie 28 well (Permit No. 2746) indicates that the gas column in the Smackover Formation is in communication with the Smackover gas column in the main part of the reservoir to the north.

An expert engineering witness for Hatters/LeBoc testified that two adverse conditions could result from the exclusion of Section 21 and its producing well (Getty Baldwin 21-7, Permit No. 2222-B) from the proposed unit area. He maintains that some of the reinjected gas from the unit could be produced by the Baldwin 21-7 well to the detriment of most of the mineral interest owners in the unitized area, excluding Petitioner who has a large working interest ownership in this well. Further, he avers that the 21-7 well could experience an early breakthrough of dry injected gas from the proposed unit area, thus terminating the production of full well stream reservoir gas to the detriment of mineral interest owners in Section 21. The position of Amax is in agreement with Hatters/LeBoc's averment that the exclusion of the Baldwin 21-7 well from the proposed unit area could be detrimental to the mineral interest owners in the unit area.

Hildreth et al maintains that the proposed allowable plan for non-unit wells fails to protect the correlative rights of the mineral interest owners in Section 28 by not affording them their just and equitable share of production from this common gas pool. Hildreth et al contends that Petitioner's proposed Special Field Rules allocate to the Exxon Wilkie 28 well an allowable based on its percentage of the total number of surface acres in the developed drilling units. Hildreth et al further maintains that Petitioner has demonstrated that surface acres has no relationship to recoverable oil and gas beneath a tract, and that the available geological and engineering data confirms that the Wilkie 28 well is completed and producing from the same common pool as wells in the main part of the field and that the entire pool should therefore be unitized, including Section 28.

Findings

The Board has considered all of the testimony, exhibits and well data in order to ascertain if the following sections or portions of sections should be included in the proposed unit area and hereby finds:

Sections 8 and 11, Township 2 South, Range 1 West and Sections 27 and 28, Township 1 South, Range 1 West

25. That the weight of the geologic and engineering evidence supports Petitioner's averment that the Southeast quarter of Section 8 and a portion of the Northwest quarter of Section 11, Township 2 South, Range 1 West, and the Southwest quarter of Section 27 and the South half of Section 28, Township 1 South, Range 1 West, should be included in the proposed unit area. The inclusion of a portion of Section 11 (Getty Exhibit 11) is supported by a reasonable interpretation of the eastern boundary of the reservoir from the available well data in the vicinity of said section. The inclusion of a portion of Section 8 (Getty Exhibit 11) is supported by a reasonable interpretation of

the western boundary of the reservoir from the available well data in the vicinity of said section. The inclusion of a portion of Sections 27 and 28 in the proposed unit (Getty Exhibit 11) is reasonable and is evidenced by 7 feet of net pay and 0.7 porosity-feet of pore volume (Getty Exhibit 3) in the Getty Newman 28-10 No. 1 well (Permit No. 2325), located in the Southeast quarter of Section 28.

Sections 25, 26, and 36, Township 1 South, Range 1 West

26. That the Stone Smith 36-5 well (Permit No. 2608), located in the Northwest quarter of Section 36, Township 1 South, Range 1 West is a plugged and abandoned dry hole that failed to encounter the Smackover and Northlet Formations which are found to be productive of gas in sections located to the west and southwest of said Section 36, and that the information derived from the drilling and logging of the Smith well does not support the inclusion of any portions of Sections 25, 26, and 36 into the proposed unit area.

27. That the Smackover and Norphlet structural configuration and hydrocarbon productive limit in the northern part of the proposed unit, as demonstrated on Petitioner's Exhibits 5 and 6, are valid interpretations based on all available well data, and these maps were prepared in a manner which honored these data as well as influences of salt tectonics, and as such, were contoured in a manner consistent with good mapping concepts and techniques.

28. That no evidence has been presented to indicate that the gas-water contact lies any deeper than -18,300 feet in the northern part of the proposed unit area, and the data from wells in this part of the field clearly support the use of the -18,300 structural contour as the productive limit.

29. That Petitioner's mapping of the western edge

of the salt mass along the west sectional boundary of the Northwest quarter of Section 36, Township 1 South, Range 1 West has no affect or bearing on the fact that the -18,300 foot structural contour is located entirely outside of Sections 25, 26, and 36 and no affect on the productive limit of the field.

30. That the technical data and testimony does not establish that the Smackover and Norphlet Formations beneath any part of Section 36, Township 1, Range 1 West, are structurally higher than -18,300 feet, and no credible evidence was presented to indicate that a hydrocarbon bearing Smackover reservoir is present beneath Section 36.

31. That the presence of a fault in shallow wells to the north of Section 25, Township 1 South, Range 1 West does not establish or indicate a continuation of the Hatter's Pond Field structure into and north of said Section 25. No evidence has been presented to substantiate the presence of the Hatter's Pond Field structure or salt uplift along the fault and in a northerly direction beyond the defined proposed unit area as shown on Petitioner's Exhibits 5 and 6. Further, any interpretation of the presence of this salt uplift beneath any parts of Sections 25, 26, and 36, Township 1 South, Range 1 West, and any areas north of these sections, is highly speculative and unsupported by the evidence.

32. That the production history, high productivity, and pore volume of the presently producing Getty Creola Minerals 35-11 No. 3 well (Permit No. 3277), and the plugged and abandoned past producer, the Getty Creola Minerals 35-11 No. 2 well (Permit No. 2258), Section 35, Township 1 South, Range 1 West, does not indicate the drainage of hydrocarbons from beneath any portions of adjacent Sections 25, 26, and 36, especially since the mapping of pore volume does not unequivocally establish the

amount of hydrocarbons beneath any particular tract. Assertions that portions of these sections are presently being drained of hydrocarbons by the Creola Minerals 35-11 No. 3 well (Permit No. 3277), or any other wells, are unsupported by the evidence.

33. That a northeastward trend of Smackover bars and porosity zones in the Smackover Formation of the Hatter's Pond Field does not establish that reservoir grade zones of porosity are present beneath any portions of Sections 25, 26, and 36, Township 1 South, Range 1 West.

34. That no evidence was presented to substantiate or support a geologic interpretation that shows the Smackover structure to be more elongated to the Northeast than that shown on Petitioner's Exhibit 5.

35. That the weight of the evidence clearly supports the productive limit as established by Petitioner in the northern part of the proposed unit area and insufficient technical data was submitted to justify adding any portions of Sections 25, 26, and 36, Township 1 South, Range 1 West. The addition of any portions of these sections would unjustly dilute the mineral interests in those tracts which are proven by wells to be productive, and also those mineral interests in tracts indicated to be productive by substantial evidence and sufficient technical data; and, therefore, would not protect the correlative rights of the mineral interest owners.

Sections 21, 22, 28, and 33, Township 2 South, Range 1 West

36. That in order to insure the protection of correlative rights of mineral interest owners in Section 21, Township 2 South, Range 1 West, and mineral interest owners in the proposed unit area, the Getty Baldwin 21-7

well (Permit No. 2222-B) must be included within a unitized area.

37. That the weight of the evidence indicates pressure communication between the Exxon Wilkie 28 well (Permit No. 2746), Section 28, Township 2 South, Range 1 West, and the main part of the Hatter's Pond Field to the north; however, the evidence is inconclusive for a determination of the nature of this pressure communication.

38. That the testimony and exhibits raise serious doubts about the accuracy of the geologic mapping of Section 21, Township 2 South, Range 1 West, as shown on Petitioner's Exhibits 5 and 6, and demonstrate an unequivocal need for the area south of the proposed unit to be remapped by a committee of experts. Therefore, a committee of experts, including geologists, geophysicists, and petroleum engineers should be formed for the purpose of mapping Sections 21 and 28, Township 2 South, Range 1 West, and any extensions of the common gas pool therefrom, and also for the purpose of determining the nature of the pressure communication between the Exxon Wilkie 28 well (Permit No. 2746) and the wells located to the north of this well. Due to the fact that the Boyd 22-4 well (Permit No. 2381-B) in Section 22 lies in close proximity to Section 21, the information provided by this well and any other available data should be carefully examined by the committee to determine if it is necessary to revise in any manner the interpreted geologic structure and projected productive limit in Section 22, Township 2 South, Range 1 West, as displayed on Petitioner's Exhibits 5 and 6.

39. That the determination of the need to include any portions of Sections 28 and 33, Township 2 South, Range 1 West, within a proposed unit must await the Board's review of a technical evaluation of this area by a

committee of experts. It must be determined if any conditions exist that would necessitate the inclusion of Section 28, and any productive extension therefrom, into any unitized area of the field.

VI.

SPECIAL FIELD RULES, UNIT AGREEMENT, AND UNIT OPERATING AGREEMENT

The Petitioner submitted evidence that the Special Field Rules for the Hatter's Pond Field should be amended (Getty Exhibit 24).

The Petitioner testified that the Unit Agreement and Unit Operating Agreement (Getty exhibits 25 and 26) have incorporated the provisions of Section 9-17-83, *Code of Alabama* (1975) and that the Unit Agreement has been executed by at least 75 percent of the working interests and 75 percent of the royalty interests.

The Petitioner proposes that Article 11.1 (Enlargement of the Unit Area and Unitized Formation) of the Unit Agreement contain subparagraph (d) which requires "the written agreement to the enlargement (of the Unit Area) by at least sixty percent (60%) in interest of the royalty owners in the Unit Area prior to enlargement." Creola, in support of the Petitioner, avers that Article 11.1 subparagraph (d) of the Unit Agreement is valid and necessary to protect the correlative rights of such owners.

Hatters/LeBoc and the Baldwins testified that they oppose the inclusion of Article 11.1 subparagraph (d) in the Unit Agreement. These two parties contend that this provision would prevent the enlargement of the unit area, on an equitable basis, without the written approval of Creola and

other similarly aligned parties, even if the Board decided, upon evidence submitted, that there was a need for the enlargement of the unit area.

Findings

The Board has considered all of the testimony and exhibits pertaining to the proposed amendments to the Special Field Rules and to the proposed Unit Agreement and Unit Operating Agreement and hereby finds:

40. That the Special Field Rules for the Hatter's Pond Field should not be amended at this time and that the Special Field Rules heretofore adopted by Board Order No. 82-91 on May 14, 1982, shall remain in full force and affect.

41. That the Unit Agreement and Unit Operating Agreement should not be approved at this time but that Article 11.1 (Enlargement of the Unit Area and Unitized Formation) subparagraph (d) must be deleted from the final Unit Agreement.

ORDER

IT IS, THEREFORE, HEREBY ORDERED, ADJUDGED AND DECREED by the State Oil and Gas Board of Alabama that the petition of Getty Oil Company, entered as Docket No. 8-19-821, be and hereby is remanded to the Petitioner. The Petitioner is ordered to immediately prepare a unitization proposal, including a Unit Agreement, a Unit Operating Agreement, and Special Field Rules consistent with the findings adopted herein.

IT IS FURTHER ORDERED that:

1. A committee of experts, including geologists, geophysicists, and petroleum engineers, be formed by

Petitioner for the purpose of mapping Sections 21, 22, and 28, Township 2 South, Range 1 West, and any extensions of the common gas pool therefrom, and also for the purpose of determining the nature of the pressure communication between the Exxon Wilkie 28 well (Permit No. 2746) and the wells located to the north of this well. All parties who are affected by the inclusion *vel non* of these sections shall have an opportunity to participate in the committee meetings.

2. Petitioner shall make a redetermination of tract participations based on the tract participation formula enunciated in the findings herein and on the unit area to be proposed. The redetermination shall also be based on the finding herein that mapping of pore volume values higher than actually present in any well is not an acceptable mapping technique for the unitization of the Hatter's Pond Field. All parties who are affected by said redetermination shall have an opportunity to participate in this procedure.

3. Petitioner shall submit monthly progress reports on unitization to the State Oil and Gas Supervisor. Petitioner is encouraged to commence the committee meetings on or before October 1, 1983.

4. Petitioner shall, in order to prevent waste and protect correlative rights, present a unitization proposal to the Board expeditiously. If such a proposal is not presented to the Board within a reasonable period of time, the Board may consider options including but not limited to a reduction in allowables for the Hatter's Pond Field.

5. Petitioner shall submit a new unitization petition to the Board, containing a new docket number, and such petition must fully comply with the notice provisions of Rule 400-1-12-.10 of the *State Oil and Gas Board of*

Alabama Administrative Code. Upon receipt of such petition, the Board shall immediately set a hearing for said Cause.

This Cause came on for hearing before a quorum of the Board consisting of The Honorable Gaines C. McCorquodale and The Honorable James G. Lee who were present throughout the hearing and heard testimony of all witnesses, the arguments of Counsel, and examined the documentary evidence adduced.

DATED AND ORDERED this 29th day of July, 1983.

STATE OIL AND GAS BOARD
OF ALABAMA

By:/s/illegible
Gaines C. McCorquodale, Acting Chairman

By:/s/ James G. Lee
James G. Lee, Member

ATTEST:

/s/Ernest A. Mancini, Secretary
Ernest A. Mancini, Secretary

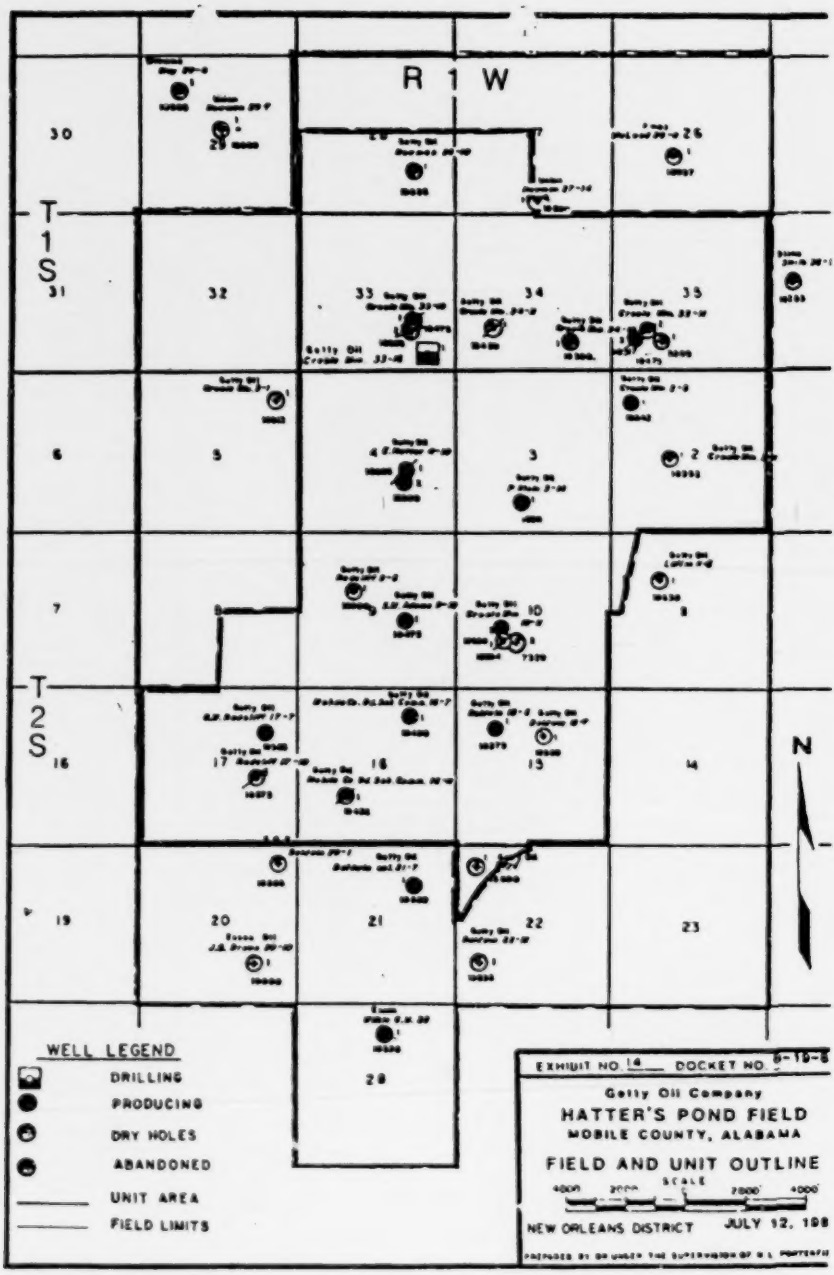

EXHIBIT 1

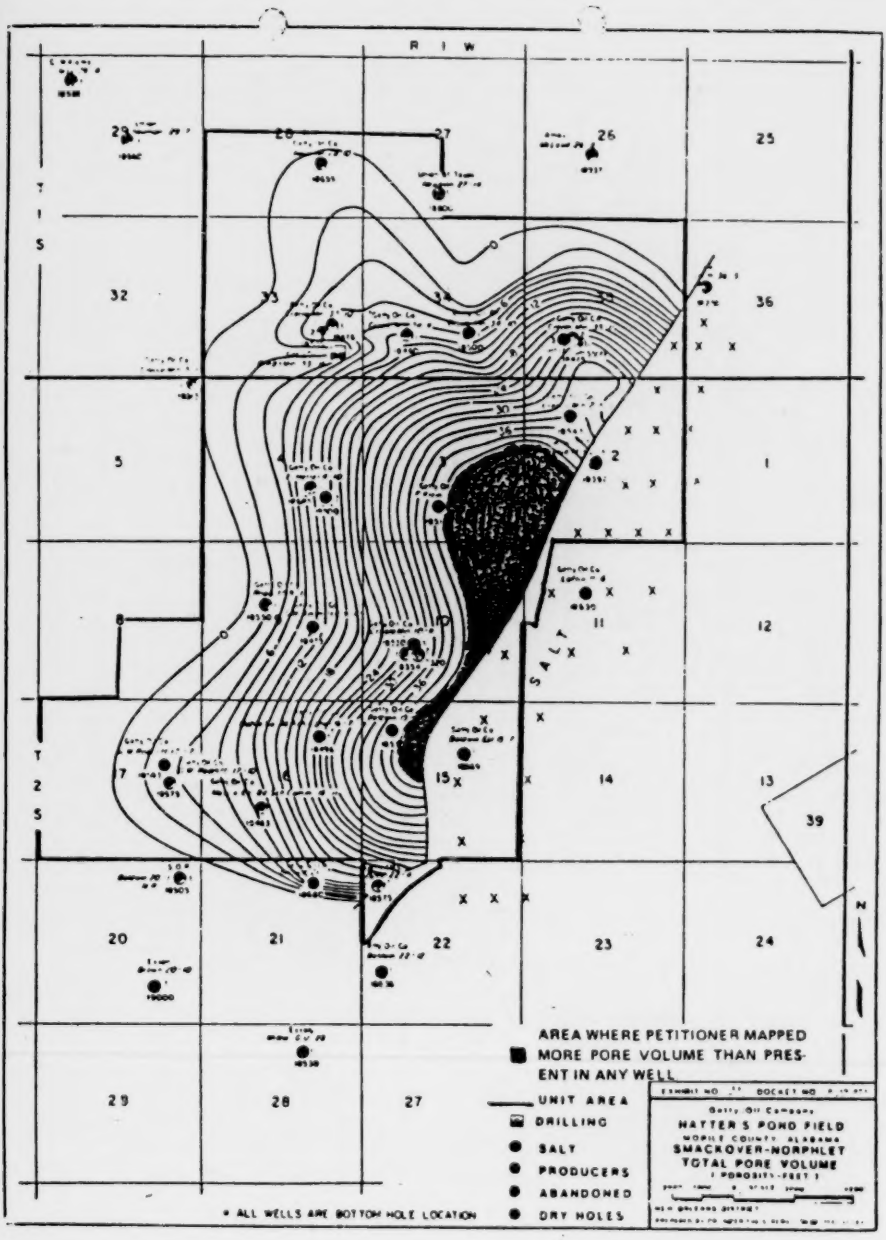

EXHIBIT 2

(Shaded Area Highlighted by the Board)

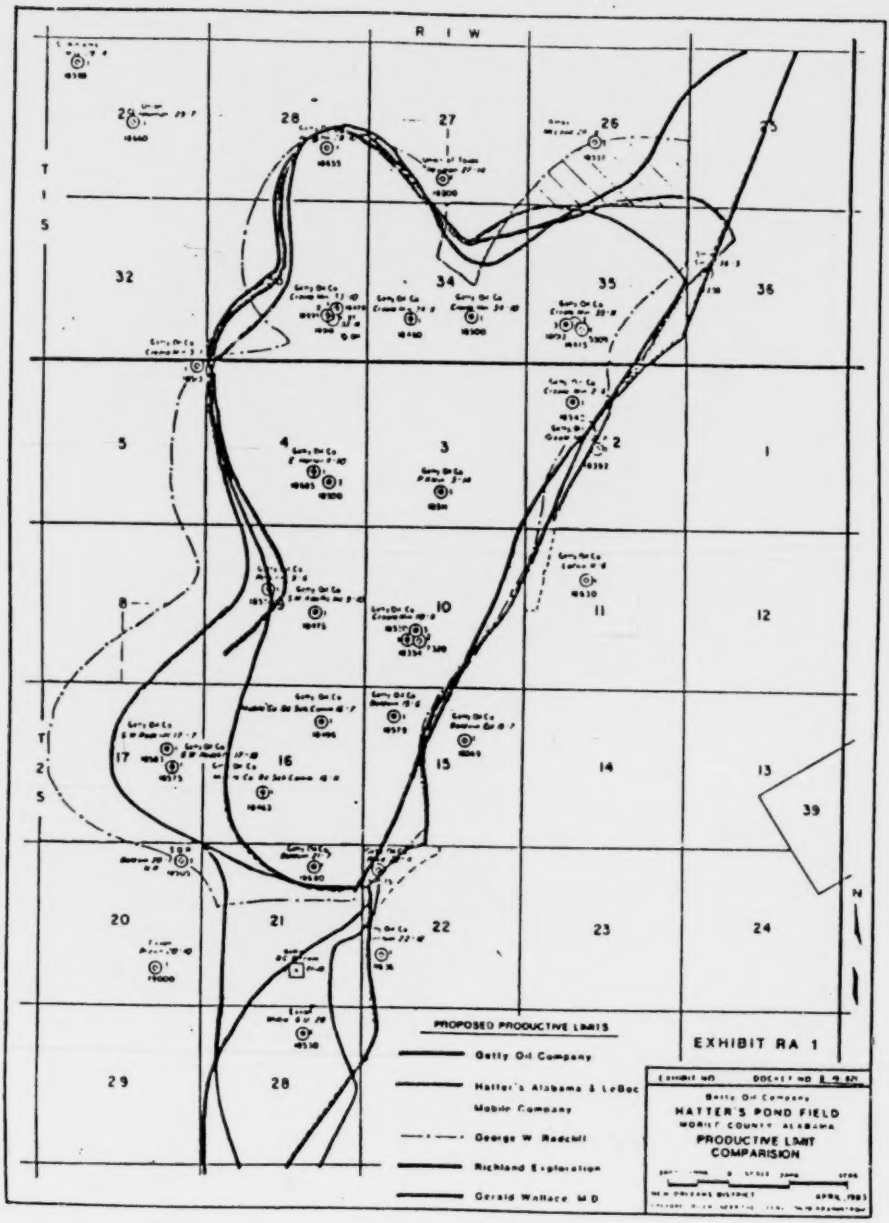

EXHIBIT 3